In the Claims

Listing of the Claims

This listing of claims will replace all prior versions, and listings, of the claims in the application.

1. (Original) Apparatus for directing particles entrained in a fluid, comprising a chamber having a first wall, including means for generating a sound wave having a frequency *v*, and a second, opposite wall capable of reflecting the sound wave in which the first and second wall define a conduit for the passage of the fluid, and in which the thickness of the second wall is such that the path length of the standing wave in the second wall is a multiple of about ½ the wavelength λ_r of the sound wave therein.

2. (Original) Apparatus according to Claim 1, in which the first wall further comprises a coupling layer.

3. (Currently Amended) Apparatus according to ~~Claim 1 or~~ Claim 2, in which the width of the conduit is a multiple of ½ or ¼ for the wavelength λ_f of the sound wave in the fluid.

4. (Currently Amended) Apparatus according to Claim 3 ~~when dependant on Claim 2~~, in which the thickness of the material transmitting the sound wave in the first wall is a multiple of ½ or ¼ of the wavelength λ_t of the sound wave therein.

5. (Currently Amended) Apparatus according to ~~any of Claims~~Claim 1 ~~to~~ 4, in which the thickness of the material capable of generating the sound wave is an odd multiple of ½ of the wavelength λ_g of the sound wave therein.

6. (Currently Amended) Apparatus according to ~~any preceding~~ Claim 1, in which the total acoustic path length of the wave is a multiple of ½ of the wavelength of the sound wave λ therein.

7. (Currently Amended) Apparatus according to ~~any preceding~~ Claim 1, in which the material capable of generating the sound wave is a piezoceramic.

8. (Original) Apparatus according to Claim 7, in which the frequency ν of the sound wave is at or adjacent the resonant frequency of the piezoceramic material.

9. (Currently Amended) Apparatus according to ~~any preceding~~ Claim 1, in which the second wall comprises glass, steel, carbon or silicon.

10. (Currently Amended) Apparatus according to ~~any preceding~~ Claim 1, in which the material in the first wall capable of transmitting the sound wave comprises steel, carbon or silicon.

11. (Currently Amended) Apparatus according to ~~any preceding~~ Claim 1, in which the sound wave is an untrasound wave.

12. (Currently Amended) Apparatus according to ~~any preceding~~ Claim 1, further comprising detection means for detecting particles at or adjacent the first and/or second walls.

13. (Original) Apparatus according to Claim 12, in which the detection means comprise a biological sensing medium.

14. (Original) Apparatus according to Claim 13, in which the sensing medium comprise one or more antibodies or lectins.

15. (Currently Amended) Apparatus according to ~~any of Claims~~ Claim 12 ~~to 14~~, in which the second wall is removable.

16. (Currently Amended) Apparatus according to ~~any of Claims~~Claim 12 ~~to 15~~, in which the second wall and the sensing medium comprise a surface plasmon resonance or a metal leaky waveguide chip.

17. (Original) Apparatus according to Claim 16, in which the detection means further comprise means providing light incident the second wall and means detecting a change in the angle thereof required for resonance or optical coupling.

18. (Currently Amended) Apparatus according to Claim 16 ~~or Claim 17~~, in which the detection means further comprise means detecting light scattered or emitted from the particles.

19. (Original) A method of detecting particles in a fluid comprising the steps of i) passing the fluid through a chamber comprising a first wall including means for generating a second wave of frequency v and a second, opposite wall capable of reflecting the sound wave which together define a conduit for the passage of the fluid and detection means for detecting particles at the first and/or second walls, ii) selecting the frequency v such that the path length of the standing wave in the second wall is a multiple of about ½ of the wavelength λ_r of the sound therein and iii) detecting the particles.

20. (Currently Amended) A method according to Claim ~~23~~19, in which the width of the conduit is a ¼ of the wavelength λ_f of the sound wave in the fluid.

21. (Currently Amended) A method according to Claim ~~23~~19, in which the detection step is preceded by the removal of the second wall from the chamber.